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Fig. 2.



Fig. 3.



Fig. 4.

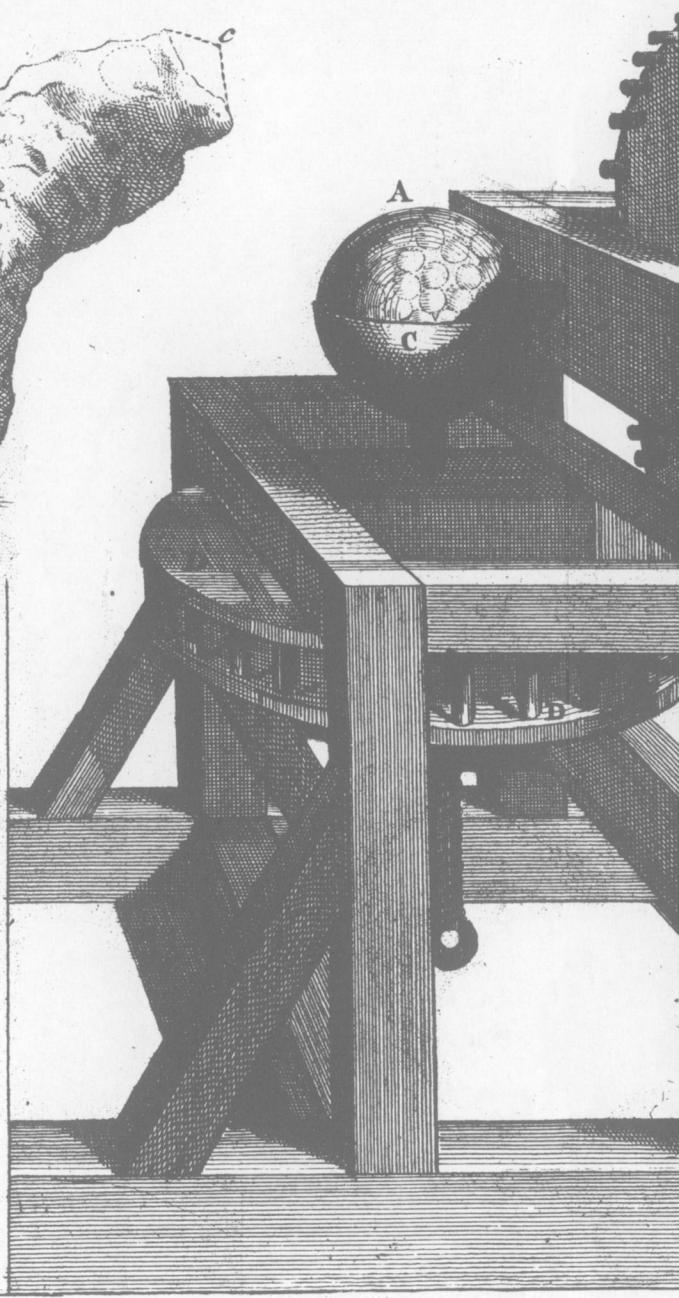
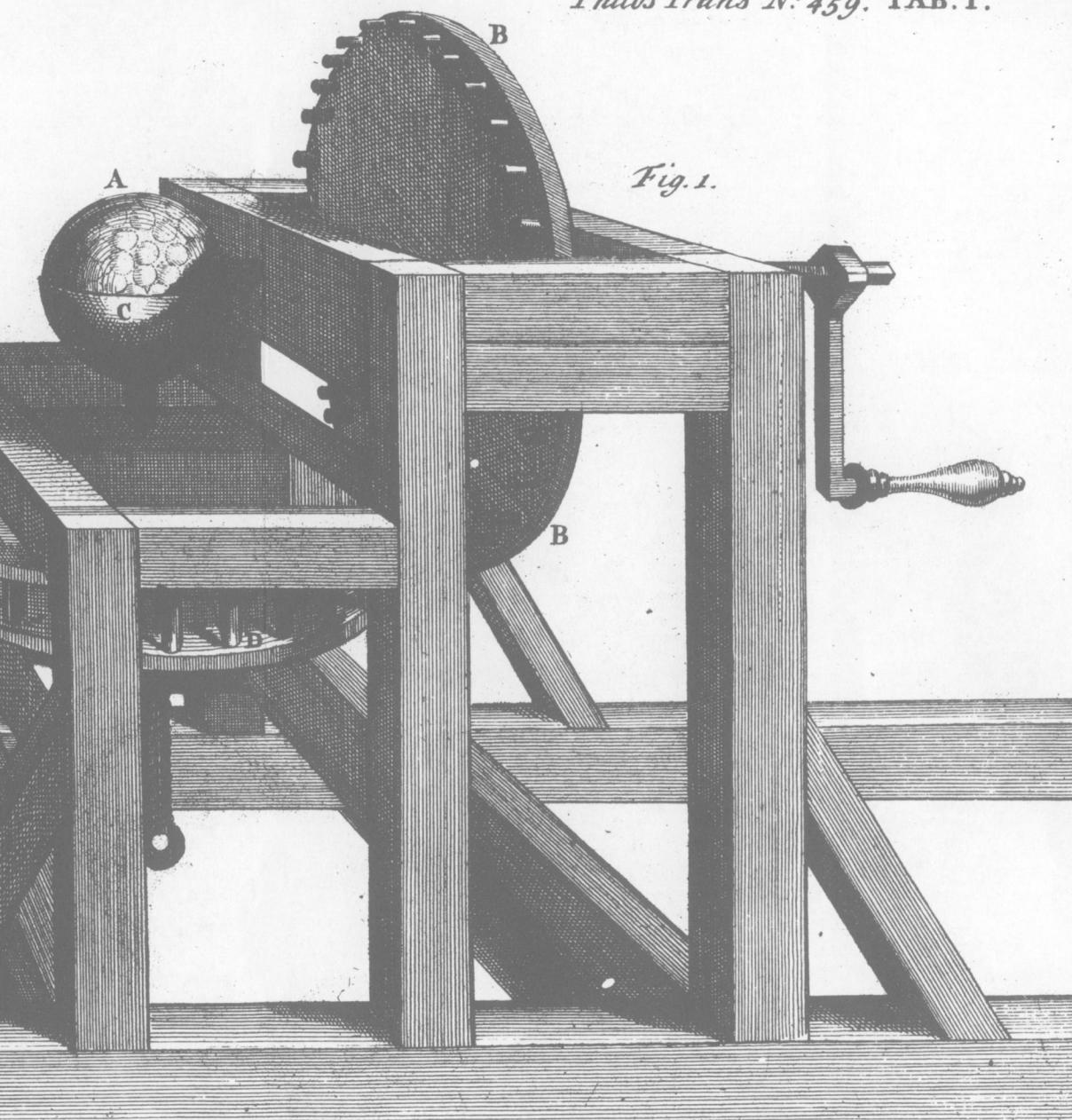


Fig. 1.



I. *The Figure of a Machine for grinding Lenses spherically, invented by Mr. Samuel Jenkins, and communicated by him to the Hon^{ble} Sir Hans Sloane, Bart. Pr. R. S. &c.*

SIR,

THE Advantage it would be to have *Lenses* of the spherical Kind, Segments of a true Sphere, hath occasioned the Invention of many Machines and Methods of Grinding, in order to produce such Segments: But nothing hitherto made public hath answered the End proposed.

The best Methods now in Use will only produce an Approximation to a truly spherical Figure, but demonstrably not one, though the Artificer should employ the utmost Skill and Care in the Use of the best Machines hitherto invented: And indeed, at present, Gentlemen have nothing to depend on, that their *Lenses* are nearly spherical, but the Care and Integrity of the Workmen; in which how often they are deceived, is too obvious to every one who hath Occasion to use such *Lenses*.

I therefore beg Leave to submit to your Consideration the Effects of a Machine, of which the inclosed is a Representation [TAB. I. Fig. 1.] ; which, as it is contrived to turn a Sphere at one and the same time on Two Axises which cut each other at Right Angles, with equal Velocity and Pressure on each of them, I conceive it is demonstrable, that (without any Skill or Care in the Workman) it will produce a Seg-

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ment of a true Sphere, barely by turning round the Wheels; which if so, the Consequences will be,

1st, That all Grinders of such Glasses, &c. will gladly use them; a labouring Man, whom they hire for less Wages, being, by the Help of this Machine, able to do more Work in a Day, than a skilful Artificer, without it, in Two Days. And,

2^{dly}, All Gentlemen will have the Pleasure to know the *Lenses* they make use of are truly spherical, it being impossible this Machine should produce any other Figure.

If you think this Contrivance of Importance enough to be offered to the ROYAL SOCIETY, you will do me a great deal of Honour to communicate it from,

SIR,

Essex-Court,
Nov. 29. 1737.

*Your most obliged
Humble Servant,*

Samuel Jenkins.

Explanation of Fig. I. TAB. I

- A. *A Globe covered with Cement, in which are fixed the Pieces of Glass to be ground.*
This Globe is fastened to the Axis, and turns with
- B. *the Wheel B.*
- C. *Is the brass Cup, which polishes the Glass: This is fastened to the Axis, and turns with*
- D. *the Wheel D. So that the Motion of this Cup C is at Right Angles with the Motion of the Globe A.*

II. Ob-